EBERLINE
SERVICES

April 23, 2008

RECEIVED
APR 2008

Mr. Steve Trent
Fluor Hanford Inc.
1200 Jadwin Avenue
Richland, WA 99352

Reference: **P.O. #33677**
             Eberline Services R8-03-129-7065, SDG H3669
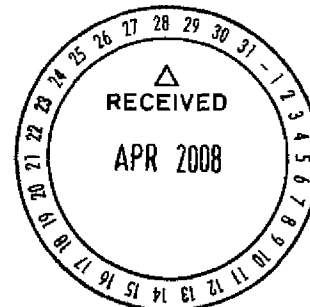
Dear Mr. Trent:

Enclosed is the data report for three solid (soil) samples designated under SAF No. F08-043 received at Eberline Services on March 27, 2008. The samples were analyzed according to the accompanying chain-of-custody documents.

Please call if you have any questions concerning this report.

Sincerely,

Melissa C. Mannion
Senior Program Manager

MCM/njv

Enclosure: Data Package

00000001

1.0   GENERAL

Fluor Hanford Inc. (FH) Sample Delivery Group H3669 was composed of three solid (soil) samples designated under SAF No. F08-043 with a Project Designation of: 216-A-30 Crib Sampling.

The sample was received as stated on the Chain-of-Custody documents. Any discrepancies are noted on the Eberline Services Sample Receipt Checklist.

2.0   ANALYSIS NOTES

2.1   Tritium Analysis

No problems were encountered during the course of the analyses.

2.2   Nickel-63 Analysis

No problems were encountered during the course of the analyses.

2.3   Technetium-99 Analysis

No problems were encountered during the course of the analyses.

2.4   Isotopic Thorium Analysis

No problems were encountered during the course of the analyses.

3.0   Case Narrative Certification Statement

"I certify that this data package is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data obtained in this hard copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature."

Melissa Mannion   07/24/08

Melissa C. Mannion   Date
Senior Program Manager

E B E R L I N E   S E R V I C E S / R I C H M O N D
SAMPLE DELIVERY GROUP H3669

SDG <u>7065</u> Contact <u>Melissa C. Mannion</u>	Client <u>Hanford</u> Contract No. <u>33677</u> Case no <u>SDG H3669</u>

S U M M A R Y   D A T A   S E C T I O N

Prepared by

Reviewed by

Lab id	<u>EBRLNE</u>
Protocol	<u>Fluor</u>
Version	<u>Ver 1.0</u>
Form	<u>DVD-TOC</u>
Version	<u>3.06</u>
Report date	<u>04/23/08</u>

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SDG 7065
Contact Melissa C. Mannion

R E P O R T   G U I D E

Client Hanford
Contract No. 33677
Case no SDG H3669

A B O U T   T H E   D A T A   S U M M A R Y   S E C T I O N

The Data Summary Section of a Data Package has all data, in several useful orders, necessary for first level, routine review of the data package for a Sample Delivery Group (SDG). This section follows the Data Package Narrative, which has an overview of the data package and a discussion of special problems. It is followed by the Raw Data Section, which has full details.

The Data Summary Section has several groups of reports:

SAMPLE SUMMARIES

The Sample and QC Summary Reports show all samples, including QC samples, reported in one SDG. These reports cross-reference client and lab sample identifiers.

PREPARATION BATCH SUMMARY

The Preparation Batch Summary Report shows all preparation batches (lab groupings reflecting how work was organized) relevant to the reported SDG with information necessary to check the completeness and consistency of the SDG.

WORK SUMMARY

The Work Summary Report shows all samples and work done on them relevant to the reported SDG.

METHOD BLANKS

The Method Blank Reports, one for each Method Blank relevant to the SDG, show all results and primary supporting information for the blanks.

LAB CONTROL SAMPLES

The Lab Control Sample Reports, one for each Lab Control Sample relevant to the SDG, show all results, recoveries and primary supporting information for these QC samples.

Lab id EBRLNE
Protocol Fluor
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 04/23/08

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SDG 7065
Contact Melissa C. Mannion

G U I D E ,   c o n t .

Client Hanford
Contract No. 33677
Case no SDG H3669

A B O U T   T H E   D A T A   S U M M A R Y   S E C T I O N

DUPLICATES

The Duplicate Reports, one for each Duplicate and Original sample pair relevant to the SDG, show all results, differences and primary supporting information for these QC samples.

MATRIX SPIKES

The Matrix Spike Reports, one for each Spiked and Original sample pair relevant to the SDG, show all results, recoveries and primary supporting information for these QC samples.

DATA SHEETS

The Data Sheet Reports, one for each client sample in the SDG, show all results and primary supporting information for these samples.

METHOD SUMMARIES

The Method Summary Reports, one for each test used in the SDG, show all results, QC and method performance data for one analyte on one or two pages. (A test is a short code for the method used to do certain work to the client's specification.)

REPORT GUIDES

The Report Guides, one for each of the above groups of reports, have documentation on how to read the associated reports.

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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H3669

LAB SAMPLE SUMMARY

Client Hanford

Contract No. 33677

Case no SDG H3669

LAB SAMPLE ID	CLIENT SAMPLE ID	LOCATION	MATRIX	LEVEL	SAF NO	CHAIN OF CUSTODY	COLLECTED
R803129-01	B1TH04	C5941, I-004	SOLID		F08-043	F08-43-149	03/06/08 10:45
R803129-02	B1TV15	C5941, I-SSP-001	SOLID		F08-043	F08-43-149	03/11/08 12:50
R803129-03	B1TV19	C5941, I-SSP-001	SOLID		F08-043	F08-43-149	03/12/08 12:55
R803129-04	Lab Control Sample		SOLID		F08-043		
R803129-05	Method Blank		SOLID		F08-043		
R803129-06	Duplicate (R803129-02)	C5941, I-SSP-001	SOLID		F08-043		03/11/08 12:50

Lab id	EBRLNE
Protocol	Fluor
Version	Ver 1.0
Form	DVD-LS
Version	3.06
Report date	04/23/08

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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H3669

SDG 7065
Contact Melissa C. Mannion

QC SUMMARY

Client Hanford
Contract No. 33677
Case no SDG H3669

QC BATCH	CHAIN OF CUSTODY	CLIENT SAMPLE ID	MATRIX	% SOLIDS	SAMPLE AMOUNT	BASIS AMOUNT	DAYS SINCE RECEIVED	COLL	LAB SAMPLE ID	DEPARTMENT SAMPLE ID
7065	F08-43-149	B1TH04	SOLID	93.7	161 g		03/27/08	21	R803129-01	7065-001
		B1TV15	SOLID	95.0	132 g		03/27/08	16	R803129-02	7065-002
		B1TV19	SOLID	95.1	142 g		03/27/08	15	R803129-03	7065-003
		Method Blank	SOLID						R803129-05	7065-005
		Lab Control Sample	SOLID						R803129-04	7065-004
		Duplicate (R803129-02)	SOLID	95.0	132 g		03/27/08	16	R803129-06	7065-006

Lab id EBRLNE
Protocol Fluor
Version Ver 1.0
Form DVD-QS
Version 3.06
Report date 04/23/08

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| SDG 7065 |
| Contact Melissa C. Mannion |

PREP BATCH SUMMARY

| Client Hanford |
| Contract No. 33677 |
| Case no SDG H3669 |

TEST	MATRIX	METHOD	PREPARATION BATCH	ERROR 2σ %	CLIENT	MORE	RE	BLANK	LCS	DUP/ORIG	MS/ORIG	QUALI-FIERS

Alpha Spectroscopy

| TH | SOLID | Thorium, Isotopic in Solids | 6145-173 | 8.0 | 3 | | | 1 | 1 | 1/1 | | |

Beta Counting

| TC | SOLID | Technetium 99 in Solids | 6145-173 | 13.2 | 3 | | | 1 | 1 | 1/1 | | |

Liquid Scintillation Counting

| H | SOLID | Tritium in Solids | 6145-173 | 10.0 | 3 | | | 1 | 1 | 1/1 | | |

| NI_L | SOLID | Nickel 63 in Solids | 6145-173 | 11.2 | 3 | | | 1 | 1 | 1/1 | | |

Duplicates and Matrix Spikes are those with original (Client) sample in this Sample Delivery Group.

Blank and LCS planchets are those in the same preparation batch as some Client, Duplicate or Spike sample.

| Lab id EBRLNE |
| Protocol Fluor |
| Version Ver 1.0 |
| Form DVD-PBS |
| Version 3.06 |
| Report date 04/23/08 |

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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H3669

LAB WORK SUMMARY

LAB SAMPLE COLLECTED RECEIVED	CLIENT SAMPLE ID LOCATION CUSTODY	SAF No	MATRIX	PLANCHET	TEST	SUF-FIX	ANALYZED	REVIEWED	BY	METHOD
R803129-01	B1TH04			7065-001	H		04/08/08	04/11/08	BW	Tritium in Solids
03/06/08	C5941, I-004		SOLID	7065-001	NI_L		04/11/08	04/15/08	BW	Nickel 63 in Solids
03/27/08	F08-43-149	F08-043		7065-001	TC		04/15/08	04/16/08	BW	Technetium 99 in Solids
				7065-001	TH		04/19/08	04/21/08	BW	Thorium, Isotopic in Solids
R803129-02	B1TV15			7065-002	H		04/08/08	04/11/08	BW	Tritium in Solids
03/11/08	C5941, I-SSP-001		SOLID	7065-002	NI_L		04/11/08	04/15/08	BW	Nickel 63 in Solids
03/27/08	F08-43-149	F08-043		7065-002	TC		04/14/08	04/16/08	BW	Technetium 99 in Solids
				7065-002	TH		04/19/08	04/21/08	BW	Thorium, Isotopic in Solids
R803129-03	B1TV19			7065-003	H		04/08/08	04/11/08	BW	Tritium in Solids
03/12/08	C5941, I-SSP-001		SOLID	7065-003	NI_L		04/11/08	04/15/08	BW	Nickel 63 in Solids
03/27/08	F08-43-149	F08-043		7065-003	TC		04/14/08	04/16/08	BW	Technetium 99 in Solids
				7065-003	TH		04/19/08	04/21/08	BW	Thorium, Isotopic in Solids
R803129-04	Lab Control Sample			7065-004	H		04/08/08	04/11/08	BW	Tritium in Solids
			SOLID	7065-004	NI_L		04/11/08	04/15/08	BW	Nickel 63 in Solids
		F08-043		7065-004	TC		04/14/08	04/16/08	BW	Technetium 99 in Solids
				7065-004	TH		04/19/08	04/21/08	BW	Thorium, Isotopic in Solids
R803129-05	Method Blank			7065-005	H		04/08/08	04/11/08	BW	Tritium in Solids
			SOLID	7065-005	NI_L		04/11/08	04/15/08	BW	Nickel 63 in Solids
		F08-043		7065-005	TC		04/14/08	04/16/08	BW	Technetium 99 in Solids
				7065-005	TH		04/19/08	04/21/08	BW	Thorium, Isotopic in Solids
R803129-06	Duplicate (R803129-02)			7065-006	H		04/08/08	04/11/08	BW	Tritium in Solids
03/11/08	C5941, I-SSP-001		SOLID	7065-006	NI_L		04/11/08	04/15/08	BW	Nickel 63 in Solids
03/27/08		F08-043		7065-006	TC		04/15/08	04/16/08	BW	Technetium 99 in Solids
				7065-006	TH		04/19/08	04/21/08	BW	Thorium, Isotopic in Solids

Lab id EBRLNE
Protocol Fluor
Version Ver 1.0
Form DVD-LWS
Version 3.06
Report date 04/23/08

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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H3669

WORK SUMMARY, cont.

Client Hanford
Contract No. 33677
Case no SDG H3669

COUNTS OF TESTS BY SAMPLE TYPE

TEST	SAF No	METHOD	REFERENCE	CLIENT	MORE	RE	BLANK	LCS	DUP	SPIKE	TOTAL
H	F08-043	Tritium in Solids	TRITIUM_COX_LSC	3			1	1	1		6
NI_L	F08-043	Nickel 63 in Solids	NI63_LSC	3			1	1	1		6
TC	F08-043	Technetium 99 in Solids	TC99_TR_SEP_GPC	3			1	1	1		6
TH	F08-043	Thorium, Isotopic in Solids	THISO_IE_PLATE_AEA	3			1	1	1		6
TOTALS				12			4	4	4		24

Lab id EBRLNE
Protocol Fluor
Version Ver 1.0
Form DVD-LWS
Version 3.06
Report date 04/23/08

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SAMPLE DELIVERY GROUP H3669

7065-005   **Method Blank**

M E T H O D   B L A N K

SDG <u>7065</u>	Client/Case no <u>Hanford</u> <u>SDG H3669</u>
Contact <u>Melissa C. Mannion</u>	Contract <u>No. 33677</u>
Lab sample id <u>R803129-05</u>	Client sample id <u>Method Blank</u>
Dept sample id <u>7065-005</u>	Material/Matrix _____ <u>SOLID</u>
	SAF No <u>F08-043</u>

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	0	3.3	5.66	400	U	H
Nickel 63	13981-37-8	0.117	1.5	2.63	30.0	U	NI_L
Technetium 99	14133-76-7	-0.022	0.17	0.545	12.0	U	TC
Thorium 228	14274-82-9	0.044	0.12	0.210	1.00	U	TH
Thorium 230	14269-63-7	0.072	0.14	0.266	1.00	U	TH
Thorium 232	TH-232	0	0.058	0.111	1.00	U	TH

216-A-30 Crib Sampling

QC-BLANK #65278

Lab id	<u>EBRLNE</u>
Protocol	<u>Fluor</u>
Version	<u>Ver 1.0</u>
Form	<u>DVD-DS</u>
Version	<u>3.06</u>
Report date	<u>04/23/08</u>

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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H3669

Lab Control Sample

LAB CONTROL SAMPLE

SDG 7065

Contact Melissa C. Mannion

Lab sample id R803129-04

Dept sample id 7065-004

Client/Case no Hanford   SDG H3669

Contract No. 33677

Client sample id Lab Control Sample

Material/Matrix   SOLID

SAF No F08-043

ANALYTE	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST	ADDED pCi/g	2σ ERR pCi/g	REC %	3σ LMTS (TOTAL)	PROTOCOL LIMITS
Tritium	804	16	5.66	400		H	827	33	97	84-116	80-120
Nickel 63	212	5.9	2.57	30.0		NI_L	222	8.9	96	82-118	80-120
Technetium 99	102	2.6	0.607	12.0		TC	109	4.4	94	80-120	80-120
Thorium 230	34.0	2.2	0.256	1.00		TH	36.4	1.5	93	84-116	80-120

216-A-30 Crib Sampling

QC-LCS #65277

Lab id EBRLNE

Protocol Fluor

Version Ver 1.0

Form DVD-LCS

Version 3.06

Report date 04/23/08

00000012

7065-006   B1TV15

DUPLICATE

SDG 7065		Client/Case no Hanford	SDG H3669
Contact Melissa C. Mannion		Contract No. 33677	
DUPLICATE	ORIGINAL		
Lab sample id R803129-06	Lab sample id R803129-02	Client sample id B1TV15	
Dept sample id 7065-006	Dept sample id 7065-002	Location/Matrix C5941, I-SSP-001	SOLID
	Received 03/27/08	Collected/Weight 03/11/08 12:50	132 g
% solids 95.0	% solids 95.0	Custody/SAF No F08-43-149	F08-043

ANALYTE	DUPLICATE pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST	ORIGINAL pCi/g	2σ ERR (COUNT)	MDA pCi/g	QUALI-FIERS	RPD %	3σ TOT	DER σ
Tritium	-0.870	2.6	4.61	400	U	H	0.620	2.8	4.75	U	-		0.8
Nickel 63	0	2.2	3.85	30.0	U	NI_L	-0.359	1.6	2.70	U	-		0.3
Technetium 99	-0.111	0.19	0.658	12.0	U	TC	0.082	0.21	0.591	U	-		1.4
Thorium 228	0.674	0.20	0.182	1.00		TH	0.495	0.20	0.225		31	75	1.2
Thorium 230	0.758	0.23	0.247	1.00		TH	0.730	0.23	0.232		4	68	0.2
Thorium 232	0.702	0.18	0.085	1.00		TH	0.478	0.18	0.121		38	67	1.7

216-A-30 Crib Sampling

QC-DUP#2 65279

Lab id	EBRLNE
Protocol	Fluor
Version	Ver 1.0
Form	DVD-DUP
Version	3.06
Report date	04/23/08

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SDG 7065	Client/Case no Hanford	SDG H3669
Contact Melissa C. Mannion	Contract No. 33677	
Lab sample id R803129-01	Client sample id B1TH04	
Dept sample id 7065-001	Location/Matrix C5941, I-004	SOLID
Received 03/27/08	Collected/Weight 03/06/08 10:45 161 g	
% solids 93.7	Custody/SAF No F08-43-149 F08-043	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	1.55	3.0	5.08	400	U	H
Nickel 63	13981-37-8	1.52	1.9	3.12	30.0	U	NI_L
Technetium 99	14133-76-7	0.036	0.20	0.650	12.0	U	TC
Thorium 228	14274-82-9	0.630	0.20	0.218	1.00		TH
Thorium 230	14269-63-7	0.811	0.22	0.237	1.00		TH
Thorium 232	TH-232	0.570	0.16	0.084	1.00		TH

216-A-30 Crib Sampling

DATA SHEETS
Page 1
SUMMARY DATA SECTION
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Lab id	EBRLNE
Protocol	Fluor
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	04/23/08

SDG 7065	Client/Case no Hanford	SDG H3669
Contact Melissa C. Mannion	Contract No. 33677	

Lab sample id R803129-02	Client sample id B1TV15	
Dept sample id 7065-002	Location/Matrix C5941, I-SSP-001	SOLID
Received 03/27/08	Collected/Weight 03/11/08 12:50 132 g	
% solids 95.0	Custody/SAF No F08-43-149 F08-043	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	0.620	2.8	4.75	400	U	H
Nickel 63	13981-37-8	-0.359	1.6	2.70	30.0	U	NI_L
Technetium 99	14133-76-7	0.082	0.21	0.591	12.0	U	TC
Thorium 228	14274-82-9	0.495	0.20	0.225	1.00		TH
Thorium 230	14269-63-7	0.730	0.23	0.232	1.00		TH
Thorium 232	TH-232	0.478	0.18	0.121	1.00		TH

216-A-30 Crib Sampling

Lab id	EBRLNE
Protocol	Fluor
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	04/23/08

DATA SHEETS
Page 2
SUMMARY DATA SECTION
Page 12

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DATA SHEET

SDG 7065	Client/Case no Hanford	SDG H3669
Contact Melissa C. Mannion	Contract No. 33677	
Lab sample id R803129-03	Client sample id B1TV19	
Dept sample id 7065-003	Location/Matrix C5941, I-SSP-001	SOLID
Received 03/27/08	Collected/Weight 03/12/08 12:55	142 g
% solids 95.1	Custody/SAF No F08-43-149	F08-043

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	0.069	2.8	4.78	400	U	H
Nickel 63	13981-37-8	-0.197	1.9	3.33	30.0	U	NI_L
Technetium 99	14133-76-7	0.041	0.23	0.637	12.0	U	TC
Thorium 228	14274-82-9	0.548	0.17	0.114	1.00		TH
Thorium 230	14269-63-7	0.838	0.24	0.209	1.00		TH
Thorium 232	TH-232	0.460	0.17	0.113	1.00		TH

216-A-30 Crib Sampling

Lab id	EBRLNE
Protocol	Fluor
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	04/23/08

DATA SHEETS
Page 3
SUMMARY DATA SECTION
Page 13

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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H3669

Test TH Matrix SOLID	Client Hanford
SDG 7065	Contract No. 33677
Contact Melissa C. Mannion	Contract SDG H3669

LAB METHOD SUMMARY

THORIUM, ISOTOPIC IN SOLIDS

ALPHA SPECTROSCOPY

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Thorium 230
Preparation batch 6145-173					
R803129-01			7065-001	B1TH04	0.811
R803129-02			7065-002	B1TV15	0.730
R803129-03			7065-003	B1TV19	0.838
R803129-04			7065-004	Lab Control Sample	ok
R803129-05			7065-005	Method Blank	U
R803129-06			7065-006	Duplicate (R803129-02)	ok

Nominal values and limits from method   RDLs (pCi/g)   1.00

216-A-30 Crib Sampling

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MAX MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 6145-173 2σ prep error 8.0 % Reference Lab Notebook #6145, pg. 173																
R803129-01			B1TH04	0.237	0.250			97		427			44	04/18/08	04/19	SS-055
R803129-02			B1TV15	0.232	0.250			90		429			39	04/18/08	04/19	SS-061
R803129-03			B1TV19	0.209	0.250			94		428			38	04/18/08	04/19	SS-064
R803129-04			Lab Control Sample	0.256	0.250			94		428				04/18/08	04/19	SS-065
R803129-05			Method Blank	0.266	0.250			87		452				04/18/08	04/19	SS-031
R803129-06			Duplicate (R803129-02)	0.247	0.250			92		452			39	04/18/08	04/19	SS-033
Nominal values and limits from method				1.00	0.250			20-105		150			180			

PROCEDURES	REFERENCE	THISO_IE_PLATE_AEA
	SPP-070	Soil Dissolution, < 1.0g Aliquot, rev 7
	CP-900	Thorium in Water and Dissolved Solid Samples by Extraction Chromatography, rev 1
	CP-008	Heavy Element Electroplating, rev 9

AVERAGES ± 2 SD	MDA	0.241 ± 0.040
FOR 6 SAMPLES	YIELD	92 ± 7

Lab id	EBRLNE
Protocol	Fluor
Version	Ver 1.0
Form	DVD-LMS
Version	3.06
Report date	04/23/08

Test __TC__ Matrix __SOLID__
SDG __7065__
Contact __Melissa C. Mannion__

LAB METHOD SUMMARY

TECHNETIUM 99 IN SOLIDS

BETA COUNTING

Client __Hanford__
Contract __No. 33677__
Contract __SDG H3669__

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Technetium 99	
Preparation batch 6145-173						
R803129-01			7065-001	B1TH04	U	
R803129-02			7065-002	B1TV15	U	
R803129-03			7065-003	B1TV19	U	
R803129-04			7065-004	Lab Control Sample	ok	
R803129-05			7065-005	Method Blank	U	
R803129-06			7065-006	Duplicate (R803129-02)	-	U

Nominal values and limits from method   RDLs (pCi/g)   12.0

216-A-30 Crib Sampling

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 6145-173			2σ prep error 13.2 % Reference Lab Notebook #6145, pg. 173													
R803129-01			B1TH04	0.650	1.00			83	50				40	04/10/08	04/15	GRB-207
R803129-02			B1TV15	0.591	1.00			87	50				34	04/10/08	04/14	GRB-228
R803129-03			B1TV19	0.637	1.00			86	50				33	04/10/08	04/14	GRB-201
R803129-04			Lab Control Sample	0.607	1.00			83	50					04/10/08	04/14	GRB-202
R803129-05			Method Blank	0.545	1.00			93	50					04/10/08	04/14	GRB-203
R803129-06			Duplicate (R803129-02)	0.658	1.00			78	50				35	04/10/08	04/15	GRB-228
Nominal values and limits from method				12.0	1.00			20-105	50				180			

PROCEDURES	REFERENCE	TC99_TR_SEP_GPC
	SPP-062	Sample Aliquoting, rev 0
	CP-431	Technetium-99 Purification of Soil or Resin by Extraction Chromatography, rev 2
	CP-008	Heavy Element Electroplating, rev 9

AVERAGES ± 2 SD	MDA __0.615__ ± __0.085__
FOR 6 SAMPLES	YIELD __85__ ± __10__

Lab id __EBRLNE__
Protocol __Fluor__
Version __Ver 1.0__
Form __DVD-LMS__
Version __3.06__
Report date __04/23/08__

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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H3669

LAB METHOD SUMMARY

TRITIUM IN SOLIDS

LIQUID SCINTILLATION COUNTING

Test H___ Matrix SOLID___
SDG 7065___
Contact Melissa C. Mannion___

Client Hanford___
Contract No. 33677___
Contract SDG H3669___

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Tritium	
Preparation batch 6145-173						
R803129-01			7065-001	B1TH04	U	
R803129-02			7065-002	B1TV15	U	
R803129-03			7065-003	B1TV19	U	
R803129-04			7065-004	Lab Control Sample	ok	
R803129-05			7065-005	Method Blank	U	
R803129-06			7065-006	Duplicate (R803129-02)	-	U

Nominal values and limits from method   RDLs (pCi/g)   400

216-A-30 Crib Sampling

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 6145-173 2σ prep error 10.0 % Reference Lab Notebook #6145, pg. 173																
R803129-01			B1TH04	5.08	0.337			100	50				33	04/08/08	04/08	LSC-004
R803129-02			B1TV15	4.75	0.357			100	50				28	04/08/08	04/08	LSC-004
R803129-03			B1TV19	4.78	0.360			100	50				27	04/08/08	04/08	LSC-004
R803129-04			Lab Control Sample	5.66	0.300			100	50					04/08/08	04/08	LSC-004
R803129-05			Method Blank	5.66	0.300			100	50					04/08/08	04/08	LSC-004
R803129-06			Duplicate (R803129-02)	4.61	0.359			100	50				28	04/08/08	04/08	LSC-004

Nominal values and limits from method   400   0.300   25   180

PROCEDURES	REFERENCE	TRITIUM_COX_LSC
	CP-251	Tritium/Carbon-14 Oxidation, rev 8

AVERAGES ± 2 SD	MDA	5.09	±	0.935
FOR 6 SAMPLES	YIELD	100	±	0

Lab id EBRLNE___
Protocol Fluor___
Version Ver 1.0___
Form DVD-LMS___
Version 3.06___
Report date 04/23/08___

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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H3669

LAB METHOD SUMMARY

NICKEL 63 IN SOLIDS

LIQUID SCINTILLATION COUNTING

| Test NI_L Matrix SOLID |
| SDG 7065 |
| Contact Melissa C. Mannion |

| Client Hanford |
| Contract No. 33677 |
| Contract SDG H3669 |

RESULTS

LAB SAMPLE ID	RAW TEST FIX	SUF- PLANCHET	CLIENT SAMPLE ID	Nickel 63	
Preparation batch 6145-173					
R803129-01		7065-001	B1TH04	U	
R803129-02		7065-002	B1TV15	U	
R803129-03		7065-003	B1TV19	U	
R803129-04		7065-004	Lab Control Sample	ok	
R803129-05		7065-005	Method Blank	U	
R803129-06		7065-006	Duplicate (R803129-02)	-	U

Nominal values and limits from method   RDLs (pCi/g)   30.0

216-A-30 Crib Sampling

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF- FIX	CLIENT SAMPLE ID	MDA pCi/g	ALIQ g	PREP FAC	DILU- TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL- YZED	DETECTOR
Preparation batch 6145-173		2σ prep error 11.2 %	Reference Lab Notebook #6145, pg. 173													
R803129-01			B1TH04	3.12	0.500			76	50				36	04/11/08	04/11	LSC-005
R803129-02			B1TV15	2.70	0.500			89	50				31	04/11/08	04/11	LSC-005
R803129-03			B1TV19	3.33	0.500			72	50				30	04/11/08	04/11	LSC-005
R803129-04			Lab Control Sample	2.57	0.500			92	50					04/11/08	04/11	LSC-005
R803129-05			Method Blank	2.63	0.500			91	50					04/11/08	04/11	LSC-005
R803129-06			Duplicate (R803129-02)	3.85	0.500			62	50				31	04/11/08	04/11	LSC-005
Nominal values and limits from method				30.0	0.500			30-105	25				180			

PROCEDURES	REFERENCE	NI63_LSC
	SPP-070	Soil Dissolution, < 1.0g Aliquot, rev 7
	CP-280	Nickel-63 Purification, rev 3

AVERAGES ± 2 SD	MDA	3.03 ± 1.00
FOR 6 SAMPLES	YIELD	80 ± 24

| Lab id EBRLNE |
| Protocol Fluor |
| Version Ver 1.0 |
| Form DVD-LMS |
| Version 3.06 |
| Report date 04/23/08 |

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SDG <u>7065</u> Contact <u>Melissa C. Mannion</u>	**R E P O R T G U I D E**	Client <u>Hanford</u> Contract <u>No. 33677</u> Case no <u>SDG H3669</u>

S A M P L E   S U M M A R Y

The Sample and QC Summary Reports show all samples, including QC samples, reported in one Sample Delivery Group (SDG).

The Sample Summary Report fully identifies client samples and gives the corresponding lab sample identification. The QC Summary Report shows at the sample level how the lab organized the samples into batches and generated QC samples. The Preparation Batch and Method Summary Reports show this at the analysis level.

The following notes apply to these reports:

* LAB SAMPLE ID is the lab's primary identification for a sample.

* DEPARTMENT SAMPLE ID is an alternate lab id, for example one assigned by a radiochemistry department in a lab.

* CLIENT SAMPLE ID is the client's primary identification for a sample. It includes any sample preparation done by the client that is necessary to identify the sample.

* QC BATCH is a lab assigned code that groups samples to be processed and QCed together. These samples should have similar matrices.

  QC BATCH is not necessarily the same as SDG, which reflects samples received and reported together.

* All Lab Control Samples, Method Blanks, Duplicates and Matrix Spikes are shown that QC any of the samples. Due to possible reanalyses, not all results for all these QC samples may be relevant to the SDG. The Lab Control Sample, Method Blank, Duplicate, Matrix Spike and Method Summary Reports detail these relationships.

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Protocol	<u>Fluor</u>
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Report date	<u>04/23/08</u>

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Contact Melissa C. Mannion

R E P O R T   G U I D E

Client Hanford
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P R E P A R A T I O N   B A T C H   S U M M A R Y

The Preparation Batch Summary Report shows all preparation batches in one Sample Delivery Group (SDG) with information necessary to check the completeness and consistency of the SDG.

The following notes apply to this report:

* The preparation batches are shown in the same order as the Method Summary Reports are printed.

* Only analyses of planchets relevant to the SDG are included.

* Each preparation batch should have at least one Method Blank and LCS in it to validate client sample results.

* The QUALIFIERS shown are all qualifiers other than U, J, B, L and H that occur on any analysis in the preparation batch. The Method Summary Report has these qualifiers on a per sample basis.

  These qualifiers should be reviewed as follows:

  X   Some data has been manually entered or modified. Transcription errors are possible.

  P   One or more results are 'preliminary'. The data is not ready for final reporting.

  2   There were two or more results for one analyte on one planchet imported at one time. The results in DVD may not be the same as on the raw data sheets.

  Other lab defined qualifiers may occur. In general, these should be addressed in the SDG narrative.

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W O R K   S U M M A R Y

The Work Summary Report shows all samples, including QC samples, and all relevant analyses in one Sample Delivery Group (SDG). This report is often useful as supporting documentation for an invoice.

The following notes apply to this report:

* TEST is a code for the method used to measure associated analytes. Results and related information for each analyte are on the Data Sheet Report. In special cases, a test code used in the summary data section is not the same as in associated raw data. In this case, both codes are shown on the Work Summary.

* SUFFIX is the lab's code to distinguish multiple analyses (recounts, reworks, reanalyses) of a fraction of the sample. The suffix indicates which result is being reported. An empty suffix normally identifies the first attempt to analyze the sample.

* The LAB SAMPLE ID, TEST and SUFFIX uniquely identify all supporting data for a result. The Method Summary Report for each TEST has method performance data, such as yield, for each lab sample id and suffix and procedures used in the method.

* PLANCHET is an alternate lab identifier for work done for one test. It, combined with the TEST and SUFFIX, may be the best link to raw data.

* For QC samples, only analyses that directly QC some regular sample are shown. The Lab Control Sample, Method Blank, Duplicate, Matrix Spike and Method Summary Reports detail these relationships.

* The SAS (Special Analytical Services) Number is a client or lab assigned code that reflects special processing for samples, such as rapid turn around. Counts of tests done are lists by SAS number since it is likely to affect prices.

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SDG <u>7065</u> Contact <u>Melissa C. Mannion</u>	**REPORT GUIDE**	Client <u>Hanford</u> Contract <u>No. 33677</u> Case no <u>SDG H3669</u>

DATA SHEET

The Data Sheet Report shows all results and primary supporting information for one client sample or Method Blank. This report corresponds to both the CLP Inorganics and Organics Data Sheet.

The following notes apply to this report:

* TEST is a code for the method used to measure an analyte. If the TEST is empty, no data is available; the analyte was not analyzed for.

* The LAB SAMPLE ID and TEST uniquely identify work within the Summary Data Section of a Data Package. The Work Summary and Method Summary Reports further identify raw data that underlies this work.

  The Method Summary Report for each TEST has method performance data, such as yield, for each Lab Sample ID and a list of procedures used in the method.

* ERRORs can be labeled TOTAL or COUNT. TOTAL implies a preparation (non-counting method) error has been added, as square root of sum of squares, to the counting error denoted by COUNT. The preparation errors, which may vary by preparation batch, are shown on the Method Summary Report.

* A RESULT can be 'N.R.' (Not Reported). This means the lab did this work but chooses not to report it now, possibly because it was reported at another time.

* When reporting a Method Blank, a RESULT can be 'N.A.' (Not Applicable). This means there is no reported client sample work in the same preparation batch as the Blank's result. This is likely to occur when the Method Blank is associated with reanalyses of selected work for a few samples in the SDG.

The following qualifiers are defined by the DVD system:

U The RESULT is less than the MDA (Minimum Detectable Activity).

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SAMPLE DELIVERY GROUP H3669

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DATA SHEET

If the MDA is blank, the ERROR is used as the limit.

J   The RESULT is less than the RDL (Required Detection Limit) and no U qualifier is assigned.

B   A Method Blank associated with this sample had a result without a U flag and, after correcting for possibly different aliquots, that result is greater than or equal to the MDA for this sample.

Normally, B is not assigned if U is. When method blank subtraction is shown on this report, B flags are assigned based on the unsubtracted values while U's are assigned based on the subtracted ones. Both flags can be assigned in this case.

For each sample result, all Method Blank results in the same preparation batch are compared. The Method Summary Report documents this and other QC relationships.

L   Some Lab Control Sample that QC's this sample had a low recovery. The lab can disable assignment of this qualifier.

H   Similar to 'L' except the recovery was high.

P   The RESULT is 'preliminary'.

X   Some data necessary to compute the RESULT, ERROR or MDA was manually entered or modified.

2   There were two or more results available for this analyte. The reported result may not be the same as in the raw data.

Other qualifiers are lab defined. Definitions should be in the SDG narrative.

The following values are underlined to indicate possible problems:

*   An MDA is underlined if it is bigger than its RDL.

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D A T A   S H E E T

* An ERROR is underlined if the 1.645 sigma counting error is
  bigger than both the MDA and the RESULT, implying that the MDA
  may not be a good estimate of the 'real' minimum detectable
  activity.

* A negative RESULT is underlined if it is less than the negative
  of its 2 sigma counting ERROR.

* When reporting a Method Blank, a RESULT is underlined if
  greater than its MDA. If the MDA is blank, the 2 sigma counting
  error is used in the comparison.

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R E P O R T   G U I D E

L A B   C O N T R O L   S A M P L E

The Lab Control Sample Report shows all results, recoveries and primary supporting information for one Lab Control Sample.

The following notes apply to this report:

* All fields in common with the Data Sheet Report have similar usage. Refer to its Report Guide for details.

* An amount ADDED is the lab's value for the actual amount spiked into this sample with its ERROR an estimate of the error of this amount.

  An amount added is underlined if its ratio to the corresponding RDL is outside protocol specified limits.

* REC (Recovery) is RESULT divided by ADDED expressed as a percent.

* The first, computed limits for the recovery reflect:

  1. The error of RESULT, including that introduced by rounding the result prior to printing.

     If the limits are labeled (TOTAL), they include preparation error in the result. If labeled (COUNT), they do not.

  2. The error of ADDED.

  3. A lab specified, per analyte bias. The bias changes the center of the computed limits.

* The second limits are protocol defined upper and lower QC limits for the recovery.

* The recovery is underlined if it is outside either of these ranges.

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D U P L I C A T E

The Duplicate Report shows all results, differences and primary
supporting information for one Duplicate and associated Original sample.

The following notes apply to this report:

* All fields in common with the Data Sheet Report have similar
  usage. This applies both to the Duplicate and Original sample
  data. Refer to the Data Sheet Report Guide for details.

  If the Duplicate has data for a TEST and the lab did not do this
  test to the Original, the Original's RESULTs are underlined.

* The RPD (Relative Percent Difference) is the absolute value of
  the difference of the RESULTs divided by their average expressed
  as a percent.

  If both RESULTs are less than their MDAs, no RPD is computed and
  a '-' is printed.

  For an analyte, if the lab did work for both samples but has
  data for only one, the MDA from the sample with data is used as
  the other's result in the RPD.

* The first, computed limit is the sum, as square root of sum of
  squares, of the errors of the results divided by the average
  result as a percent, hence the relative error of the difference
  rather than the error of the relative difference. The errors
  include those introduced by rounding the RESULTs prior to
  printing.

  If this limit is labeled TOT, it includes the preparation error
  in the RESULTs. If labeled CNT, it does not.

  This value reported for this limit is at most 999.

* The second limit for the RPD is the larger of:

  1. A fixed percentage specified in the protocol.

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DUPLICATE

2. A protocol factor (typically 2) times the average MDA as
   a percent of the average result. This limit applies
   when the results are close to the MDAs.

* The RPD is underlined if it is greater than either limit.

* If specified by the lab, the second limit column is replaced by
  the Difference Error Ratio (DER), which is the absolute value
  of the difference of the results divided by the quadratic sum of
  their one sigma errors, the same errors as used in the first
  limit.

  Except for differences due to rounding, the DER is the
  same as the RPD divided by the first RPD limit with the
  limit scaled to 1 sigma.

* The DER is underlined if it is greater than the sigma factor,
  typically 2 or 3, shown in the header for the first RPD limit.

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M A T R I X   S P I K E

The Matrix Spike Report shows all results, recoveries and primary supporting information for one Matrix Spike and associated Original sample.

The following notes apply to this report:

* All fields in common with the Data Sheet Report have similar usage. This applies both to the Spiked and Original sample data. Refer to the Data Sheet Report Guide for details.

  If the Spike has data for a TEST and the lab did not do this test to the Original, the Original's RESULTs are underlined.

* An amount ADDED is the lab's value for the actual amount spiked into the Spike sample with its ERROR an estimate of the error of this amount.

  An amount is underlined if its ratio to the corresponding RDL is outside protocol specified limits.

* REC (Recovery) is the Spike RESULT minus the Original RESULT divided by ADDED expressed as a percent.

* The first, computed limits for the recovery reflect:

  1. The errors of the two RESULTs, including those introduced by rounding them prior to printing.

     If the limits are labeled (TOTAL), they include preparation error in the result. If labeled (COUNT), they do not.

  2. The error of ADDED.

  3. A lab specified, per analyte bias. The bias changes the center of the computed limits.

* The second limits are protocol defined upper and lower QC limits

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Contact <u>Melissa C. Mannion</u>

G U I D E ,   c o n t .

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M A T R I X   S P I K E

for the recovery.

These limits are left blank if the Original RESULT is more than
a protocol defined factor (typically 4) times ADDED. This is a
way of accounting for that when the spike is small compared to
the amount in the original sample, the recovery is unreliable.

*   The recovery is underlined (out of spec) if it is outside either
of these ranges.

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R E P O R T   G U I D E

M E T H O D   S U M M A R Y

The Method Summary Report has two tables. One shows up to five results measured using one method. The other has performance data for the method. There is one report for each TEST, as used on the Data Sheet Report.

The following notes apply to this report:

* Each table is subdivided into sections, one for each preparation batch. A preparation batch is a group of aliquots prepared at roughly the same time in one work area of the lab using the same method.

    There should be Lab Control Sample and Method Blank results in each preparation batch since this close correspondence makes the QC meaningful. Depending on lab policy, Duplicates need not occur in each batch since they QC sample dependencies such as matrix effects.

* The RAW TEST column shows the test code used in the raw data to identify a particular analysis if it is different than the test code in the header of the report. This occurs in special cases due to method specific details about how the lab labels work.

    The Lab Sample or Planchet ID combined with the (Raw) Test Code and Suffix uniquely identify the raw data for each analysis.

* If a result is less than both its MDA and RDL, it is replaced by just 'U' on this report. If it is greater than or equal to the RDL but less than the MDA, the result is shown with a 'U' flag.

    The J and X flags are as on the data sheet.

* Non-U results for Method Blanks are underlined to indicate possible contamination of other samples in the preparation batch. The Method Blank Report has supporting data.

* Lab Control Sample and Matrix Spike results are shown as: ok, No data, LOW or HIGH, with the last two underlined. 'No data'

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METHOD   SUMMARY

means no amount ADDED was specified. 'LOW' and 'HIGH'
correspond to when the recovery is underlined on the Lab Control
Sample or Matrix Spike Report. See these reports for supporting
data.

* Duplicate sample results are shown as: ok, No data, or OUT, with
  the last two underlined. 'No data' means there was no original
  sample data found for this duplicate. 'OUT' corresponds to when
  the RPD is underlined on the Duplicate Report. See this report
  for supporting data.

* If the MDA column is labeled 'MAX MDA', there was more than one
  result measured by the reported method and the MDA shown is the
  largest MDA. If not all these results have the same RDL, the
  MAX MDA reflects only those results with RDL equal to the
  smallest one.

  MDAs are underlined if greater than the printed RDL.

* Aliquots are underlined if less than the nominal value specified
  for the method.

* Prepareation factors are underlined if greater than the nominal
  value specified for the method.

* Dilution factors are underlined if greater than the nominal
  value specified for the method.

* Residues are underlined if outside the range specified for the
  method. Residues are not printed if yields are.

* Yields, which may be gravimetric, radiometric or some type of
  recovery depending on the method, are underlined if outside the
  range specified for the method.

* Efficiencies are underlined if outside the range specified for
  the method. Efficiencies are detector and geometry dependent so
  this test is only approximate.

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METHOD SUMMARY

* Count times are underlined if less than the nominal value specified for the method.

* Resolutions (as FWHM; Full Width at Half Max) are underlined if greater than the method specified limit.

* Tracer drifts are underlined if their absolute values are greater than the method specified limit. Tracer drifts are not printed if percent moistures are.

* Days Held are underlined if greater than the holding time specified in the protocol.

* Analysis dates are underlined if before their planchet's preparation date or, if a limit is specified, too far after it.

For some methods, ratios as percentages and error estimates for them are computed for pairs of results. A ratio column header like '1÷3' means the ratio of the first result column and the third result column.

Ratios are not computed for Lab Control Sample, Method Blank or Matrix Spike results since their matrices are not necessarily similar to client samples'.

The error estimate for a ratio of results from one planchet reflects only counting errors since other errors should be correlated. For a ratio involving different planchets, if QC limits are computed based on total errors, the error for the ratio allows for the preparation errors for the planchets.

The ratio is underlined (out of spec) if the absolute value of its difference from the nominal value is greater than its error estimate. If no nominal value is specified, this test is not done.

For Gross Alpha or Gross Beta results, there may be a column showing the sum of other Alpha or Beta emitters. This sum includes all relevant

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SDG <u>7065</u>

Contact <u>Melissa C. Mannion</u>

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Client <u>Hanford</u>

Contract <u>No. 33677</u>

Case no <u>SDG H3669</u>

METHOD SUMMARY

results in the DVD database, whether reported or not. Results in the
sum are weighted by a particles/decay value specified by the lab for
each relevant analyte. Results less than their MDA are not included.
No sums are computed for Lab Control, Method Blank or Matrix Spike
samples since their various planchets may not be physically related.

If a ratio of total isotopic to Gross Alpha or Beta is shown, the error
for the ratio reflects both the error in the Gross result and the sum,
as square root of sum of squares, of the errors in the isotopic results.

For total elemental uranium or thorium results, there may be a column
showing the total weight computed from associated isotopic results.
Ignoring results less than their MDAs, this is a weighted sum of the
isotopic results. The weights depend on the molecular weight and
half-life of each isotope so as to convert activities (decays) to weight
(atoms).

If a ratio of total computed to measured elemental uranium or thorium is
shown, the error for the ratio reflects the errors in all the
measurements.

REPORT GUIDES

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SUMMARY DATA SECTION

Page 32

Lab id <u>EBRLNE</u>

Protocol <u>Fluor</u>

Version <u>Ver 1.0</u>

Form <u>DVD-RG</u>

Version <u>3.06</u>

Report date <u>04/23/08</u>

00000035

COLLECTOR NCO Sampler Fulton	COMPANY CONTACT TRENT, SJ

TELEPHONE NO. 373-5869

PROJECT COORDINATOR WIDRIG, DL

PRICE CODE 8N

DATA TURNAROUND 45 Days / 45 Days

SAMPLING LOCATION C5941, I-004

PROJECT DESIGNATION 216-A-30 Crib Sampling

H3669 (7065)

SAF NO. F08-043

AIR QUALITY ¬

ICE CHEST NO.

FIELD LOGBOOK NO.

ACTUAL SAMPLE DEPTH 15.6 - 18.1

COA 123215ES20

METHOD OF SHIPMENT FEDERAL EXPRESS

SHIPPED TO Eberline Services

OFFSITE PROPERTY NO. SEE PTR

BILL OF LADING/AIR BILL NO. SEE PTR

MATRIX*
A=Air
DL=Drum Liquids
DS=Drum Solids
L=Liquid
O=Oil
S=Soil
SE=Sediment
T=Tissue
V=Vegitation
W=Water
WI=Wipe
X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE Radioactive tie to B1TDB6

PRESERVATION None

TYPE OF CONTAINER G/P

NO. OF CONTAINER(S) 1

VOLUME 120mL

SAMPLE ANALYSIS SEE ITEM (1) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B1TH04	SOIL	3-1-08	1045	✓

LOT# 024875

CHAIN OF POSSESSION / SIGN/PRINT NAMES (handwritten, illegible)

SPECIAL INSTRUCTIONS
** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1)Tritium - H3; Technetium-99 {Technetium-99} Nickel-63; Isotopic Thorium {Thorium-232}

A 6003-618(01/06)

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE	8N	DATA TURNAROUND
NCO Sampler *Pole*	TRENT, SJ	373-5869	WIDRIG, DL			

SAMPLING LOCATION	PROJECT DESIGNATION	SAF NO.	AIR QUALITY	45 Days / 45 Days
C5941, I-SSP-001	216-A-30 Crib Sampling *H3669 (7065)*	F08-043		

ICE CHEST NO.

FIELD LOGBOOK NO.	ACTUAL SAMPLE DEPTH *18.1'-20.6'*	COA	METHOD OF SHIPMENT
		123215ES10	FEDERAL EXPRESS

SHIPPED TO	OFFSITE PROPERTY NO.	BILL OF LADING/AIR BILL NO.
Eberline Services	See PTR	See PTR

MATRIX*	POSSIBLE SAMPLE HAZARDS/ REMARKS	
A=Air	Contains Radioactive Material at concentrations	**PRESERVATION** — None
DL=Drum Liquids	that are not regulated for transportation per 49	
DS=Drum Solids	CFR but are not releasable per DOE Order	**TYPE OF CONTAINER** — G/P
L=Liquid	5400 5 (1990/1993)	
O=Oil		**NO. OF CONTAINER(S)** — 1
S=Soil		
SE=Sediment		**VOLUME** — 120mL
*=Tissue		
V=Vegitation		
W=Water		
WI=Wipe	**SPECIAL HANDLING AND/OR STORAGE**	**SAMPLE ANALYSIS** — SEE ITEM (1) IN SPECIAL INSTRUCTIONS
X=Other		

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B1TV15	SOIL	3-11-08	1250	X

Lot# 034975

CHAIN OF POSSESSION

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
J SPile	2-11-08 1345	Site RMA Fridge	3-11-08 1345
Mcs.t Hunter	3 25-08/(8)5	El Kawn/Ketele	3 15 08/(8)5
El Kawn	3-25-08 0944	Mo-745 Refridge # 3	3-25-08 0944
Mo-745 Ref # 3	3 26 08 1015	R. Priest/(Jim)	3 26 08 1015
r. Priest/(Jim)	3 26 08 1015	FED EX	
FED EX		MFW	03/27/08 09 00
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SPECIAL INSTRUCTIONS

(1) Tritium - H3; Technetium-99 {Technetium-99} Nickel-63; Isotopic Thorium {Thorium-232}

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

| COLLECTOR *PF 5152* *WSF/15* *FULTON* | COMPANY CONTACT | TELEPHONE NO. | PROJECT COORDINATOR | PRICE CODE 8N | DATA TURNAROUND |
| NCO Sampler | TRENT, SJ | 373-5869 | WIDRIG, DL | | |

SAMPLING LOCATION
C5941, I-SSP-00/2 *1/4 3-16-08*

PROJECT DESIGNATION
216-A-30 Crib Sampling

H3669 (7065)

SAF NO.
F08-043

AIR QUALITY

45 Days / 45 Days

ICE CHEST NO.

FIELD LOGBOOK NO.　　ACTUAL SAMPLE DEPTH

COA
123215ES10

METHOD OF SHIPMENT
FEDERAL EXPRESS

SHIPPED TO
Eberline Services

OFFSITE PROPERTY NO.
See PTR

BILL OF LADING/AIR BILL NO.
See PTR

MATRIX*	POSSIBLE SAMPLE HAZARDS/ REMARKS	PRESERVATION	None
A=Air DL=Drum Liquids DS=Drum Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegitation W=Water WI=Wipe X=Other	Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400 5 (1990, 1993)		
		TYPE OF CONTAINER	G/P
		NO. OF CONTAINER(S)	1
		VOLUME	120mL
	SPECIAL HANDLING AND/OR STORAGE	SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS

| SAMPLE NO. | MATRIX* | SAMPLE DATE | SAMPLE TIME | | | | | | | | | | | | | | |
| B1TV19 | SOIL | 3/12/08 | 1255 | | | | | | | | | | | | | | |

LOT# 024875

CHAIN OF POSSESSION

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
R. FISTA /3-*/3/12/08*	1410	MO 509 Fridge 3-12-08	1410
MO 509 Fridge	3-15-08 /0825	*El Kasu/*~~~	3-25-08/0825
El Kasu/~~~	3-25-08 0944	*El Kasu* MO 745 Freezer #3	3-25-08 0944
MO-745 Ref #3	3-26-08 1015	*R. PF/5152/Pint*/	3-26-08 1015
R. PF/5152/Pint/	3-26-08 1015	FED EX	
FED EX		*~~~*	03/27/08 09:00
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SIGN/ PRINT NAMES

SPECIAL INSTRUCTIONS
(1)Tritium - H3; Technetium-99 {Technetium-99} Nickel-63; Isotopic Thorium {Thorium-232}

| LABORATORY SECTION | RECEIVED BY | TITLE | DATE/TIME |
| FINAL SAMPLE DISPOSITION | DISPOSAL METHOD | DISPOSED BY | DATE/TIME |

O
O
O
O
O
O
W
Co

Client: _F. HANFTA_ City _RICHLAND_ State _WA_

Date/Time received _03/27/08 07.00_ CoC No. _FC2-043-149 165, 172_

Container I.D. No. _GRP-07_ Requested TAT (Days) _45_ P.O. Received Yes [ ] No [ ]

INSPECTION

1	Custody seals on shipping container intact?	Yes [√]	No [ ]	N/A [ ]
2	Custody seals on shipping container dated & signed?	Yes [√]	No [ ]	N/A [ ]
3.	Custody seals on sample containers intact?	Yes [√]	No [ ]	N/A [ ]
4.	Custody seals on sample containers dated & signed?	Yes [√]	No [ ]	N/A [ ]

5 Packing material is: Wet [ ] Dry [√]

6 Number of samples in shipping container ___5___ Sample Matrix ___

7. Number of containers per sample ___1___ (Or see CoC _____)

8. Samples are in correct container Yes [√] No [ ]

9. Paperwork agrees with samples? Yes [√] No [ ]

10 Samples have Tape [ ] Hazard labels [ ] Rad labels [ ] Appropriate sample labels [x]

11. Samples are In good condition [√] Leaking [ ] Broken Container [ ] Missing [ ]

12 Samples are Preserved [ ] Not preserved [ ] pH _____ Preservative _____

13. Describe any anomalies

14. Was P.M notified of any anomalies? Yes [ ] No [ ] Date _____

15. Inspected by _____Ako_____ Date _03/27/08_ Time. _10 00_

Customer Sample No	Beta/Gamma cpm	Ion Chamber mR/hr	Wipe	Customer Sample No.	Beta/Gamma cpm	Ion Chamber mR/hr	wipe
ALL SAMPLES	<6c						

Ion Chamber Ser No _____ Calibration date _____

Alpha Meter Ser. No _____ Calibration date _____

Beta/Gamma Meter Ser. No. _160482_ Calibration date _19MAY07_